

Claims

1. A binding apparatus for printed sheets, comprising: a carrying-in conveyor part that sets printed sheets in a planar manner on a conveyance surface of a carrying conveyor to positionally shift the printed sheets in a direction of conveyance so that leading edges thereof in the direction of conveyance can be seen from above, and conveys the printed sheets in succession in a transverse direction; a reverse conveyor part contiguous to the carrying-in conveyor part to convey the printed sheets upward from the transverse direction and convey the printed sheets downward in a direction opposed to the transverse direction; an accumulating part that sets the printed sheets in upright position at a terminal end of the reverse conveyor part to arrange and accumulate the same in the transverse direction; and a binding part that binds the printed sheets thus accumulated,

wherein the reverse conveyor part includes an upper conveyor and a lower conveyor divided vertically in a portion thereof in which the printed sheets are conveyed upward,

the lower conveyor having a branch part provided at a terminal end thereof to discharge the printed sheets from the conveyor,

the upper conveyor having a holding part provided at a start end thereof to hold a trailing end of the printed sheets held by the conveyor in a predetermined position.

2. The binding apparatus for printed sheets according to claim 1, wherein the lower conveyor comprises a lower inside conveyor and a lower outside conveyor for interposing the printed sheets therebetween from both front and back sides of the sheets, while the upper conveyor comprises an upper inside conveyor and an upper outside conveyor for interposing the printed sheets therebetween from both front and back sides of the sheets,

the branch part comprises, at a terminal end of the lower outside conveyor, a branch conveyor which is outwardly foldable to release the printed sheets from an interposed state, and a branch guide which guides the printed sheets from inside so as to make the sheets follow the outward folding of the branch conveyor,

a control unit is provided to stop conveyance of the upper conveyor when the branch conveyor is outwardly folded, and

the holding part comprises a pushing device for moving a trailing end of the printed sheets, which are held by the stopped upper conveyor, outward from inside, and a holding device for holding the trailing end of the printed sheets thus pushed out, from outside.

3. The binding apparatus for printed sheets according to claim 2, wherein the pushing device comprises a push-up bar

arranged in a position to connect between conveyance surfaces of the upper and lower inside conveyors, and push-up bar drive means for outwardly moving the push-up bar, and

the holding device comprises a holding bar pivotally provided for holding a trailing end of the printed sheets from underneath, and holding-bar drive means for vertically swinging the holding bar.

4. The binding apparatus for printed sheets according to claim 3, wherein in a case that a space is formed between printed sheets and printed sheets, the control unit eliminates such space by stopping the upper conveyor when a trailing end of a printed sheet in a preceding group adjacent to the space reaches the branch part, causing the holding part to hold the trailing end, and releasing the stoppage of the upper conveyor when the front of a succeeding group reaches the branch part.